AMENDMENT
(under Article 34)
(Translation)

To : Examiner of the Patent Office

1 Identification of the International Application
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4 Item to be Amended Specification and claims

5 Subject Matter of Amendment
As per the attached sheets, where
(1) In the specification, the description in lines 19 to 22 of page 9 "The differential pressure $\triangle P$ is defined as $P=Pa-Pc$, and the differential pressure during operation $\triangle Po$ and the differential pressure during the purge operation $\triangle Pp$ satisfy the relation: $0<\triangle Po\times\triangle Pp$." is amended to "The fuel cell system further includes control means for increasing or decreasing the amount of the inert gas supplied to the fuel cell based on the values of Pa and Pc during the purge operation of the fuel cell. The differential pressure $\triangle P$ is defined as $\triangle P=Pa-Pc$, and the differential pressure during operation $\triangle Po$ and the differential pressure during the purge operation $\triangle Pp$ satisfy the relations: $0<\triangle Po\times\triangle Pp$ and $|\triangle Pp|\leqq|\triangle Po|$.
(2) In the specification, the description in line 24 of

page 9 to line 7 of page 10 "Preferably, $\triangle Po$ and $\triangle Pp$ … it is possible to prevent this relation becoming $\triangle Po \times \triangle Pp < 0$ even temporarily" is amended to "According to the present invention, since the relation between $\triangle Po$ and $\triangle Pp$ can be controlled favorably, it is possible to prevent this relation from becoming $\triangle Po \times \triangle Pp < 0$ even temporarily. It is preferred that $\triangle Po$ and $\triangle Pp$ satisfy the relation: $\triangle Po = \triangle Pp$.

(3) In claim 1, the description "wherein the differential pressure $\triangle P$ is defined as $\triangle P = Pa - Pc$, and the differential pressure during operation $\triangle Po$ and the differential pressure during the purge operation $\triangle Pp$ satisfy the relation: $0 < \triangle Po \times \triangle Pp$." is amended to "wherein said fuel cell system further comprises control means for increasing or decreasing the amount of the inert gas supplied to said fuel cell based on the values of Pa and Pc during the purge operation of said fuel cell, and wherein the differential pressure $\triangle P$ is defined as $\triangle P = Pa - Pc$, and the differential pressure during operation $\triangle Po$ and the differential pressure during the purge operation $\triangle Pp$ satisfy the relations: $0 < \triangle Po \times \triangle Pp$ and $|\triangle Pp| \leqq |\triangle Po|$."

(4) Claims 2 and 3 are deleted.

(5) In claim 4, the expression "The fuel cell system in accordance with claim 1 or 2" is amended to "The fuel cell system in accordance with claim 1".

6 List of Attached Documents

(1) Specification, pages 9 and 10

(2) Claims, pages 42 and 43

gas of the cathode and controlling the pressure in the anode or cathode based on the measured values.

Means for Solving the Problem

[0017]

In order to solve the above-mentioned problems, a fuel cell system according to the present invention includes: a fuel cell; fuel gas supply means for supplying a fuel gas to an anode of the fuel cell; oxidant gas supply means for supplying an oxidant gas to a cathode of the fuel cell; inert gas supply means for supplying an inert gas to the anode and/or cathode of the fuel cell; and means for measuring a pressure Pa in an inlet-side flow path leading to the anode of the fuel cell and a pressure Pc in an inlet-side flow path leading to the cathode. The fuel cell is subjected to a purge operation of replacing the fuel gas and/or oxidant gas in the fuel cell with the inert gas supplied from the inert gas supply means when the fuel cell is started up or shut-down. The fuel cell system further includes means for increasing or decreasing the amount of the inert gas supplied to the fuel cell based on the values of Pa and Pc during the purge operation of the fuel cell. The differential pressure $\triangle P$ is defined as $P=Pa-Pc$, and the differential pressure during operation $\triangle Po$ and the differential pressure during the purge operation $\triangle Pp$ satisfy the relations: $0<\triangle Po\times\triangle Pp$ and $|\triangle Pp| \leqq |\triangle Po|$.

[0018]

According to the present invention, since the relation between $\triangle Po$ and $\triangle Pp$ can be controlled favorably, it is possible to prevent this relation from becoming $\triangle Po \times \triangle Pp < 0$ even temporarily.

It is preferred that $\triangle Po$ and $\triangle Pp$ satisfy the relation: $\triangle Po = \triangle Pp$.

In another preferable embodiment of the present invention, the system includes means for changing the internal diameter of an outlet-side flow path of an exhaust gas from the fuel cell, and means for changing the internal diameter based on the values of Pa and Pc during the purge operation of the fuel cell. According to this embodiment, the relation between $\triangle Po$ and $\triangle Pp$ can be controlled favorably.

The present invention makes it possible to favorably control the differential pressure during purging that is performed when the fuel cell is started up or shut down.

Effects of the Invention

[0019]

According to the present invention, during operation and during purging, the pressure on one of the anode-side and the cathode-side of the electrolyte membrane is controlled such that it is constantly larger than the